

Island at 5 a. m. on the 28th. The S. S. *Atenas* passed through a calm area between the hours of 6:15 p. m. and 7:15 p. m., E. S. T., on this date, while in the vicinity of latitude 25° north and longitude 80° west. The lowest barometer reported by this ship was 29.38 inches. At 7 p. m., E. S. T., the S. S. *Tiger*, a short distance from the *Atenas*, reported a barometer reading of 29.48 inches with a northwest gale of force 9 (Beaufort scale), clear weather, heavy rough sea, and squalls. An hour later, this same ship, giving her position as off Molasses Reef, reported clear sky, southwest gale, rising pressure, 29.54 inches.

With estimated wind velocities of 60 miles an hour near its center, the storm reached the southern tip of the Florida mainland about 30 miles south of Miami at 8 p. m. The Weather Bureau Office at Miami reported a maximum wind velocity of 44 miles an hour from the southeast, while the Miami Airport Station gave east-southeast winds of 49 miles an hour with gusts of 65 miles an hour.

Between 9:30 and 10 p. m., E. S. T., the storm center passed over Homestead and Florida City, maintaining a west-northwesterly course, with a progressive movement of about 10 to 12 miles an hour. The center then moved to the Gulf of Mexico; and at 8 a. m., E. S. T., of the 29th was located at approximately 26° north and 82°15' west.

The following is taken from the report of G. E. Dunn, forecaster at Jacksonville.

* * * The center of the storm passed a short distance south of Everglades City where a barometer reading of 29.51 inches (possibly the barometer fell still lower later) was reported at 2 a. m. with 55 miles northeast wind. Following the passage of the axis of the center an abnormally high tide occurred and by morning the tide was 5.5 feet above mean low and the water was 18 inches deep in the streets of the town at normal low tide. During the forenoon winds of about 60 miles prevailed in the Boca Grande section but with little damage.

At 3:30 p. m. hurricane warnings were ordered north of Cedar Keys to Apalachicola and were later extended westward as the storm made no further recurve. As the storm approached the northwest Florida coast its rate of movement decreased and north of Cedar Keys and especially from St. Marks westward abnormally high tides were produced considering the size and intensity of the disturbance. This was probably due to the slow movement of the storm in this area, giving the wind ample time to pile up the water along the coast. * * *

At 11 o'clock, E. S. T., on the morning of July 31, the storm had crossed the northwest Florida coast and was

centered over Valparaiso, a community on the northern shore of Choctawhatchee Bay, situated about 45 miles east of Pensacola. Reports from Valparaiso at 9 a. m. gave a barometer reading of 28.80 inches attended by east-northeast winds, estimated at 90 to 100 miles an hour. The barometric minimum, 28.73 inches, occurred there at 11 a. m., E. S. T. The calm center was over Fort Walton and Valparaiso about 1 hour and 20 minutes.

From the report of R. A. Dyke, forecaster at New Orleans:

* * * The hurricane winds extended on the coast line for about 70 miles but when allowance is made for the angle at which the storm reached the coast, the hurricane winds may be accepted as covering a width of not much over 50 miles directly across the path of the storm. * * *

As the storm moved in, the storm tide reached a height of approximately 6 feet at Panama City and Valparaiso. * * *

With rapidly diminishing intensity, after passing inland, the storm continued to move northwestward, and was centered just north of Pensacola at 8 p. m., E. S. T., of July 31. It dissipated on August 1 over the southwestern portion of Alabama.

The Weather Bureau forecasters at Jacksonville and at New Orleans issued timely warnings and bulletins relative to the intensity and movement of this disturbance. The first advice was disseminated at 9:30 a. m., E. S. T., of July 27 and advisories and bulletins followed at frequent intervals thereafter, until the storm had dissipated. In all sections affected the display of warnings preceded the arrival of the storm by 12 to 24 hours. Reports indicate property damage was slight as the storm crossed the lower portion of Florida. In the vicinity of Valparaiso and in nearby coastal sections, property damage was placed at \$123,000, as a result of wind and storm tides. Quoting again from the report of G. E. Dunn:

The fishing boat *Ketchum* was apparently lost in the Gulf with 4 persons aboard but no other loss of life directly attributable to the storm in the Jacksonville district has been reported. Fortunately most of the sponge fleet was in port but the Coast Guard plane at St. Petersburg identified and warned 11 sponge and fishing vessels involving 40 persons and a total value of \$22,000 in the storm area. The *Ketchum* left port on the 23d before the first advisory was issued and was outside the area searched by the Coast Guard plane. * * *

DUSTSTORMS OF JULY 1936 IN THE UNITED STATES

By R. J. MARTIN

[Weather Bureau, Washington, August 1936]

July had only a few duststorms, mostly local in character; with one or two exceptions, they were confined to the area between the Mississippi River and the Rocky Mountains. East of the Mississippi there were only a few scattered reports of dusty conditions.

Dense dust was reported locally over the Great Plains from Texas northward to the Canadian border, but the number of occurrences was small—in most States the average for the month was less than two storms, while in several others only light dust was noted. For example, Minnesota reported no dense dust; and only one station, in the extreme western portion of the State, observed light dust. Oklahoma, Kansas, and Nebraska, the Dakotas,

Iowa, Montana, and Wyoming were among the States experiencing dense dust during July.

At Havre, Mont., visibility was reduced to about one-half city block for 3 minutes on the 17th; the storm of the 19th at Sioux City, Iowa, reduced visibility to 300 feet for a brief period, and was followed by rain. Automobile lights were necessary at times in Sioux City during this storm; and similar conditions prevailed at Helena, Mont., on the 14th. General rains on the 27th terminated dusty conditions in southeastern counties of Colorado.

Unless the storms of August are more frequent and severe, the next issue of the REVIEW will have no dust-storm summary.